

Notice of Allowability

Application No.

10/784,939

Examiner

Hien X. Vo

Applicant(s)

KADOTA, KENICHI

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 02/25/04.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 25 February 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 02/25/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 02/25/04. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Allowable Subject Matter

2. Claims 1-20 allowed.
3. The following is an examiner's statement of reasons for allowance:

Although the prior art disclose some claimed limitations, for example:

Ushiku (U.S. Patent No. 6,782,348) discloses a diagnostic apparatus for detecting a failure in an equipment with sensors and a failure in the sensors by multivariate-analyzing signals of the sensors.

Hayashi (U.S. Patent No. 6,862,484) discloses a method of managing a manufacturing process, and more particularly to a managing method for a semiconductor manufacturing process including a wafer process (WP), a test process (TP) and an assembly process (AP).

Chen et al. (U.S. Patent No. 5,726,920) disclose a final wafer sort (FWS) testing facility, the raw log-out data that is output by FWS test stations is augmented with

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additional differentiating data to thereby produce differentiable log-outs that can be sorted according to a variety of criteria including: product number or product family, time of test, specific wafer, specific production lot, intra-reticle site number, machine operator, and the specific swappable units of equipment that participated in the FWS testing. The differentiable log-outs are stored in a database and are periodically accessed by an automatic watchdog system that tests for exception conditions calling for immediate or long-term response.

Morioka et al. (U.S. Patent No. 5,274,434) disclose a mass production line of a semiconductor manufacturing process, foreign particle inspection method and apparatus for preventing occurrence of large quantities of defects and for keeping a necessary yield. The inspection apparatus is made up in a small-sized apparatus and disposed at inlet/outlet of processing apparatuses of the production line or to a transfer system between the processing apparatuses.

As per claims 1, and 11, none of the prior art teach singularly or in combination a failure classification module configured to classify test element groups into a first test element group category where a systematic failure has not occurred and a second test element group category where the systematic failure has occurred based measurement results of electrical characteristics the test element groups; and a statistical analysis module configured create a first comparison Mahalanobis reference space using first parameters the test element groups the first test element group category from among parameters the test element groups expressed as numerical values, and to calculate a first comparison Mahalanobis distance of the first parameters

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and a second comparison Mahalanobis distance parameters of the test element groups in the second test element group category by using the first comparison Mahalanobis reference space, so as and second comparison Mahalanobis to compare the first and second comparison Mahalanobis distances.

As per claim 17, none of the prior art teach singularly or in combination an instruction of creating a first comparison Mahalanobis reference space using first parameters of the test element groups in the first test element group test element category from among parameters of the groups expressed as numerical values; and an instruction of calculating a first comparison Mahalanobis distance of the first parameters and a second comparison Mahalanobis distance of second parameters of the test element groups in the second test element group category by using the first comparison Mahalanobis reference space so as to compare the first and second comparison Mahalanobis distances.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien X. Vo whose telephone number is (571) 272-2282. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

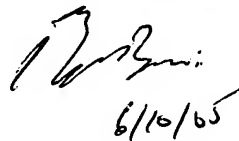
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Vo
06/06/05

BRYAN BUI
PRIMARY EXAMINER



6/10/05